Ryan Hydroelectric Facility
Great Falls Hydroelectric Facilities
Great Falls Vicinity
Cascade County
Montana

HAER No. MT-98

HISTORICAL DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Denver, Colorado 80225-0287

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HISTORIC AMERICAN ENGINEERING RECORD

RYAN HYDROELECTRIC FACILITY

HAER No. MT-98

I. INTRODUCTION

Location:	The Ryan Hydroelectric Facility is on the Missouri River approximately seven miles northeast of Great Falls, Montana. It is one of five hydroelectric generating plants situated along a 15-mile stretch of the river. The Ryan Hydroelectric Facility lies within the boundaries of the Great Falls Hydroelectric Facilities Historic District.
Quad:	Morony Dam, Mont.
UTM:	Zone 12: 490620 Easting, 5268030 Northing Zone 12: 490810 Easting, 5268360 Northing Zone 12: 491820 Easting, 5267990 Northing Zone 12: 491600 Easting, 5267890 Northing
Date of Construction:	1913-1936
Present Owner:	The Montana Power Company
Present Use:	Hydroelectric Generating Plant and Operators' Camp
Significance:	The Great Falls Hydroelectric Facilities Historic District is significant for its association with the industrial development of Montana and the consolidation of most of the state's electric industry into The Montana Power Company. The district is also associated with John D. Ryan, a promoter of hydroelectric development at Great Falls. In addition, it has buildings, structures, and equipment that are representative of design concepts of the early twentieth century. The Ryan Hydroclectric Facility is a contributing complex to the district.
Historian:	Mary McCormick Renewable Technologies, Inc. Butte, Montana 59701 September 1996

II. HISTORY OF THE RYAN HYDROELECTRIC FACILITY

A. INTRODUCTION

The Ryan Hydroelectric Facility is on the Missouri River about seven miles northeast of the city of Great Falls, Cascade County, Montana. It is one of five hydroelectric developments situated along the Great Falls region of the Missouri, a 15-mile stretch of river marked by a series of five falls and several intervening rapids. The Ryan Facility is downstream (east) from the Black Eagle, Rainbow, Cochrane hydroelectric developments and upstream (west) from the Morony facility (figure 1). At Ryan, the dam sits on the crest of the Great Falls, the largest of the river's falls. Penstocks run from the intake at the dam's north abutment to the powerhouse on the north bank of the river (figure 2). Other buildings and structures associated with the facility are also on the north river bank about ¼ mile downstream from the powerhouse. This includes a historic operators' camp.

The Ryan Hydroelectric Facility is in the boundaries of the Great Falls Hydroelectric Facilities Historic District. Resources at Ryan that contribute to the district include the dam, intake, penstocks, powerhouse, clubhouse, five houses, two garages, a barn, and other auxiliary buildings and structures. Many buildings formerly in the operators' camp have been razed over the years.

B. CONSTRUCTION OF THE RYAN HYDROELECTRIC GENERATING PLANT, 1913-1916

In 1912-1913, all existing hydroelectric facilities on the Missouri-Madison river system in western Montana were assembled under the umbrella of The Montana Power Company (Montana Power), with John D. Ryan as President. Montana Power began to rapidly expand the generating capacity of the system to provide ample cheap power to the mining industry; as well as a new industrial consumer market in the western Montana, the electric railroads. Montana Power's expansion program began with construction of the Ryan Development at Great Falls.[1]

The firm of Charles T. Main was eontracted to supervise the construction and design of the Ryan Hydroelectric Facility. Final plans prepared by the firm called for a concrete gravity-arch dam to be located at the Great Falls, 65 feet high, with a steel flashboard system increasing its height an additional 14 feet. The powerhouse was to be located about 230 feet below the north end of the dam, and underground penstocks would connect the dam and powerhouse.[2] Typical of most hydroelectric projects of the era, the development was also to include a large, on-site camp to house the hundred of workers needed for project construction.

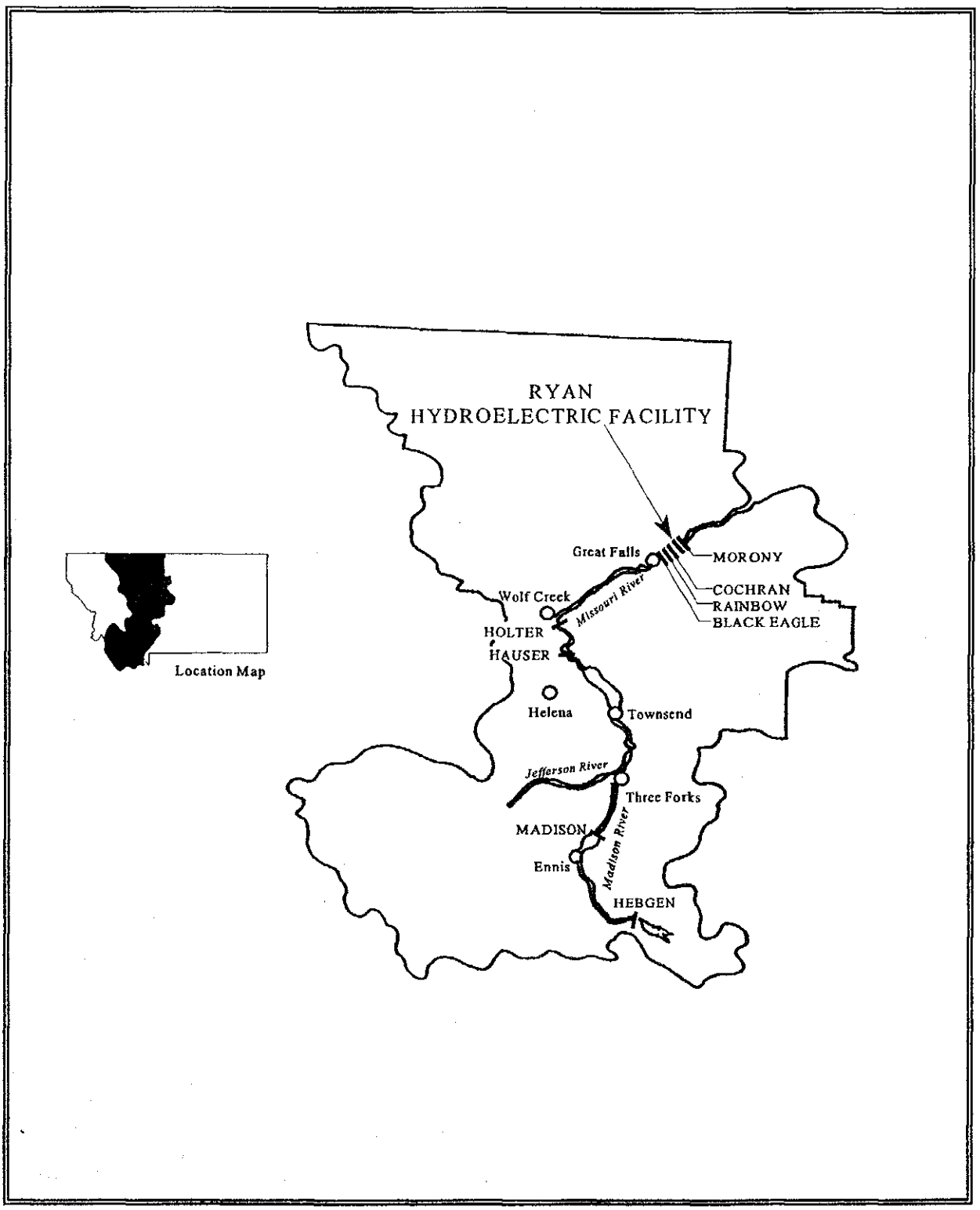

Figure 1. Ryan Hydroelectric Facility
Area Map

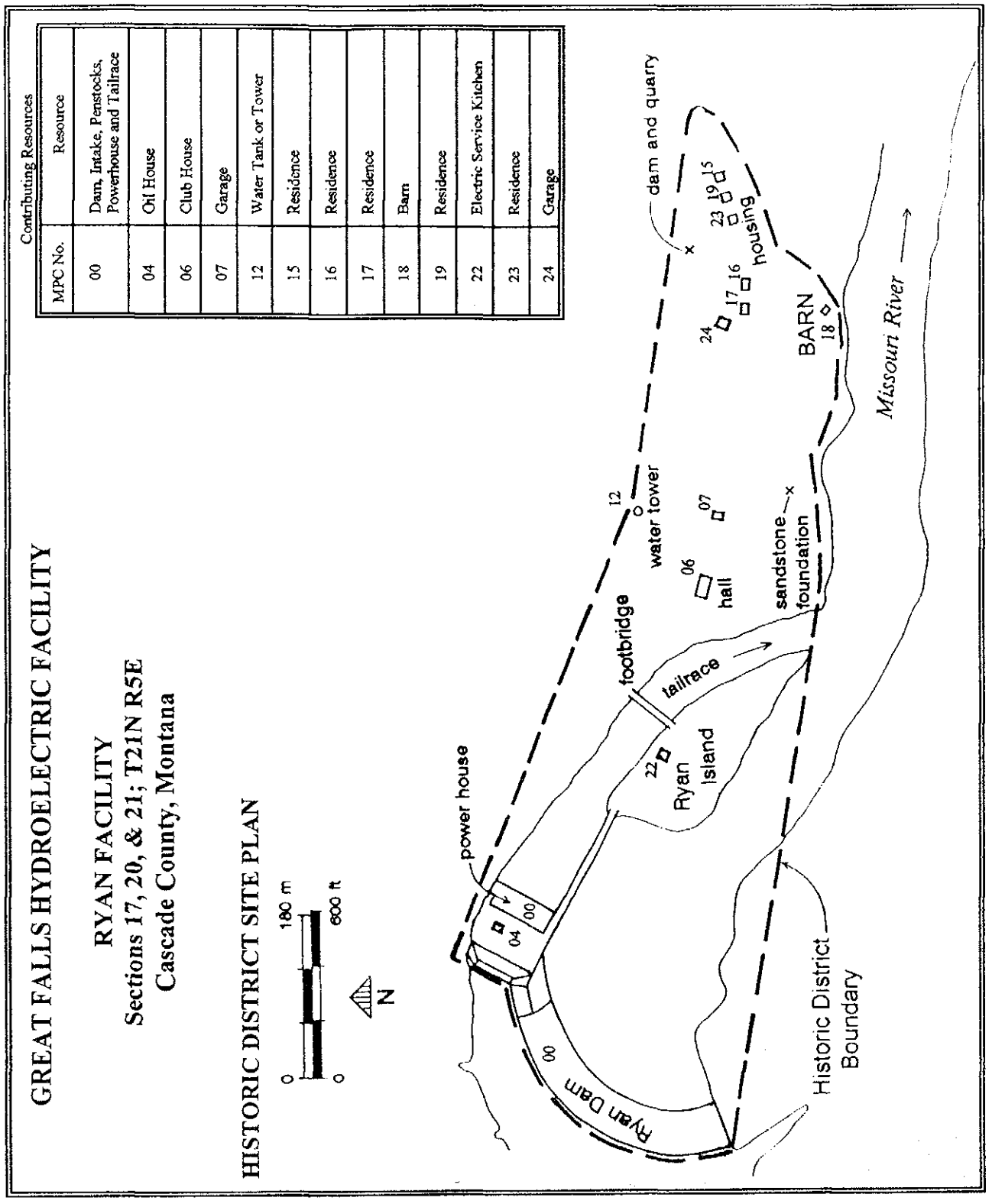

Figure 2. Ryan Hydroelectric Facility
Site Map

Full-scale construction work at Ryan began in Spring 1913. By that time, an officers' quarters, office building, several temporary bunkhouses for common labors, and other residential facilities stood on a large, level meza about ¼ mile downstream from the falls. Work on the dam proceeded rapidly until late summer of 1914, when construction was slowed due to World War I. By March 1915, all concrete work on the dam was finished and the powerhouse walls were standing. The plant went into operation on September 1, 1915, equipped with four 6,600 volt generators. In less than a year, the plant's total capacity was upgraded to 60,000 kilowatts by the installation of two additional turbine-generator units. Power from the new units was needed to supply the ACM's new electrolytic zinc plant at Great Falls.[3]

C. OPERATORS' CAMP AT THE RYAN HYDROELECTRIC FACILITY[4]

At early century hydroelectric plants on the Missouri and Madison rivers in Montana, on-site living quarters for operators and their families was often a necessary component due to the isolated location of most facilities. At the region's first developments, construction camp buildings saw continued use as residential facilities once a plant went into operation. In the early 1910s, however, officials of the newly-formed Montana Power realized that the company's housing needs at hydroelectric sites could not be adequately met by construction camp buildings which, in general, had been hastily constructed with little thought for comfort or long-term use. Consequently, Montana Power embarked on a program of constructing permanent housing at its hydroelectric sites. This construction effort peaked during the late 1910s and early 1920s. By the mid-1930s, permanent employee housing was available at almost all of the Company's hydroelectric plants.

Montana Power's operators' camps varied noticeable in size and configuration from plant to plant, but most utilized the same basic building types. Most of the housing needs were met with groups of small, frame bungalows; somewhat larger bungalows were often provided for supervisory personnel. Bungalows were similar in design to contemporary working-class housing in nearby Montana communities. In general, they exhibited a commonality of design, suggesting that standard Montana Power blue prints were employed. Although the houses were far from ostentatious, limited architectural detailing helped make the buildings more attractive. Many of the late 1910s and 1920s houses, for example, displayed bracketed eaves and other qualities typifying the then-popular Craftsman style.

During the 1920s and 1930s, new development at the operators' camps was not limited to housing but also included other building types and structures that further enhanced the quality of living at the plants. The automobile's increasing popularity led to construction of garages; many of these small structures featured pedimented false-fronts. At some plants, large brick "clubhouses" were added, providing apartments for unmarried workers as well as meeting and recreational facilities. Swimming pools also appeared at some of the Company's facilities. Formal landscaping features were also gradually added at many complexes. These landscaping projects included lawns, tree and flower plantings, stone retaining walls, and other structures.

The operators' camp at Ryan was highly typical of the evolution and growth of residential facilities at hydroelectric sites on the Madison and Missouri rivers in the early twentieth century. After the facility went on-line in 1915, most of the temporary camp buildings were soon demolished, except the officers' quarters and office building which were maintained as housing for plant operators. Beginning in the late 1910s, these facilities began to be augmented by the slow but steady of construction of permanent, single-family cottages and other residential-type other facilities which, in effect, established the Ryan operators' camp as a cohesive, small community. By the late 1930s, the camp included ten cottages, at least two garages, a barn, and an employee swimming pool. In addition, the officers' quarters had been remodeled for use as a club house. A public park and picnic facilities, including an electric service kitchen, had also been established a small man-made island between the tailrace and the river.[5] Following the 1930s, no new construction occurred at camp and it retained its configuration and general appearance for several decades.

III. ENDNOTES

1. Frank Bird, *Story of Montana Power* (Butte: The Montana Power Company, 1941), 43-44; Carrie Johnson, "Electrical Power, Copper, and John D. Ryan," *Montana: The Magazine of Western History* 38 (Autumn 1988): 28-33.

2. Cecil H. Kirk, "History of Montana Power," n.d. volume II: chapter: 9: pp. 8-9, manuscript at The Montana Power Company, Butte, Montana; "Construction of the Great Falls Hydro-Electric Development of the Great Falls Power Company," n.d. pp. 3-5, manuscript at the Rainbow Shop, The Montana Power Company, Great Falls.

3. Kirk, "History of Montana Power," II:9:10-11; "Construction of the Great Falls Hydro-Electric Development," 19-22.

4. Unless otherwise noted the following section is taken from the National Register of Historic Places, Multiple Property Documentation Form entitled "Hydroelectric Generating Facilities on the Missouri and Madison Rivers in Western Montana," by Renewable Technologies, Inc. and Ethnoscience, May 1991.

5. Montana Power Company, "Index of Expenditure and Improvements Requisitions Electric for the Years 1913 to Date," 1939, report at Record Services, The Montana Power Company, Butte; Montana Power Company, *Insurance Map of Volta, Montana,* February 1921, revised to May 1940, MPC Drawing No. 21417-E at Drafting Services, The Montana Power Company, Butte.

IV. BIBLIOGRAPHY

Bird, Frank. *Story of Montana Power.* Butte: The Montana Power Company, 1941.

"Construction of the Great Falls Hydro-Electric Development of the Great Galls Power Company." n.d. Manuscript at the Rainbow Shop, The Montana Power Company, Great Falls.

Johnson, Carrie. "Electrical Power, Copper, and John D. Ryan." *Montana: The Magazine of Western History* 38 (Autumn 1988): 28-33.

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